

Please type a plus sign (+) inside this box →



PTO/SB/08A (8-00) (Modified)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent & Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number 10/017,403
Filing Date December 14, 2001
First Named Inventor Frederick GIACOBBE
Group Art Unit 2857
Examiner Name To Be Assigned
Attorney Docket Number 25184-P029US

U.S. PATENT DOCUMENTS

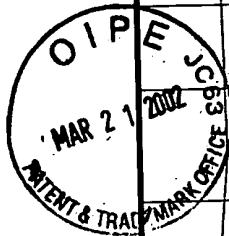
Examiner Initials	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of cited document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
		Number	Kind code ² (if known)			

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	U.S. Patent Document			Name of Patentee or Applicant of cited document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ³
		Office 3	Number ⁴	Kind code ⁵ (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the Item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), Publisher, city, and/or country where published.	T ²
TL		ANSI/IPC-SM-786A, Procedures for Characterizing and Handling of Moisture/Reflow Sensitive ICs, IPC, January 1995, Northbrook, Illinois.	
		BALUCK, Michael J., Rose, Gregory L., Virmani, Nick, Fundamentals of Plastic Encapsulated Microcircuits (PEMS) for Space Applications, NASA TECDOCS, February 1995, http://epims.gsfc.nasa.gov/ctre/act/techdocs/pems .	
		FUKUZAWA, I., Ishiguro, S., Nanbu, S., Moisture Resistance Degradation of Plastic LSIs by Reflow Soldering, Proceedings of International Reliability Physics Symposium, 1985, pp. 192-197.	
		GALLO, Anthony A., Munamarty, Ramesh, Popcorning: A Failure Mechanism in Plastic-Encapsulated Microcircuits, Dexter Corporation Technical Paper, September 1995, pp. 1-8, Olean, New York.	
		GANNAMANI, Ranjit, Pecht, Michael, An Experimental Study of Popcorning in Plastic Encapsulated Microcircuits, IEEE Transactions on Components, Packaging and Manufacturing Technology, Part A, June 1996, pp. 194-201, Vol. 19, No. 2.	
		HOLCOMB, Ken, Ryan, Lisa, Suro, Enrique, Moisture in Liquid Epoxy Encapsulant and Its Effect on SMDs, Dexter Corporation Technical Paper, December 1994, pp. 1-8, Olean, New York.	
		HUA, Fay, Leong, Bill, A Moisture Induced Failure in FCBGA Packages During Multiple Reflow, Proceedings of the Technical Program: Surface Mount International Conference and Exposition, 1998, pp. 14-17, San Jose, California.	
		HUTCHINS, Charles L., Time and Temperature Requirements for Surface Mount Soldering, Proceedings of the Technical Program: NEPCON West, 1990, pp. 288-297, Anaheim, California.	
TL		ILYAS, Qazi S.M., Poborets, Bella, Evaluation of Moisture oSensitivity of Surface Mount Plastic Packages, Proceedings of the ASME Conference, 1993, pp. 145-156, New Orleans, Louisiana.	



TL		ITO, S., Nishioda, T., Oizumi, S., Ikemura, K., Igarashi, K., Molding Compounds for Thin Surface Mount Packages and Large Chip Semiconductor Devices, Proceedings of the 39 th International Reliability Physics Symposium, 1991, pp. 190-197.	
		KITANO, Makoto, Nishimura, Asao, Kawai, Sueo, Analysis of Package Cracking During Reflow Soldering Process, Proceedings of the 26 th International Reliability Physics Symposium, 1988, pp. 90-95.	
		McCLUSKEY, P., Munamarty, R., Pecht, M., Popcoming in PBGA Packages During IR Reflow Soldering, Microelectronics International, January 1997, pp. 20-23, Vol. 42.	
		PECHT, Michael, Govind, Anand, In-Situ Measurements of Surface Mount IC Package Deformations During Reflow Soldering, IEEE Transactions of Components, Packaging and Manufacturing Technology, Part C, July 1996, pp. 1-5, Vol. 20, No. 3.	
		PECHT, M., Ranade, Y., Pecht, J., Effect of Delamination on Moisture Accelerated Failures in Plastic Encapsulated Microcircuits, Circuit World, 1997, pp. 11-15, Vol. 23, No. 4.	
		SHAN, X., Agarwal, R.K., Pecht, M., Effect of Humidity Cycling on Reliability of Overlaid High Density Interconnects, Proceedings IEEE Multichip Module Conference, March 1992, pp. 106-109.	
		THERIAULT, Martin, Carsac, C., Blostein, P., Evaluating Nitrogen Storage as an Alternative to Baking Moisture/Reflow Sensitive Components, Proceedings of the Technical Program: NEPCON West, 2000, Anaheim, California.	
		TOTTEN, Rene C., Managing Moisture-Sensitive Devices, Part 1: External Material Pipeline Considerations, Circuits Assembly, September 1996A, pp. 56-64.	
		TOTTEN, Rene C., Managing Moisture-Sensitive Devices, Part 1: Internal Material Pipeline Considerations, Circuits Assembly, October 1996B, pp. 34-38.	
		TUBBS, Tara R., Gallo, Anthony A., Accelerated Popcorn Testing of High Solder-Reflow Crack Resistant Molding Compounds, Dexter Corporation Technical Paper, April 1996, pp. 1-7, Olean, New York.	
		YALAMANCHILI, P., Gannamani, R., Munamarty, R., McCLUSKEY, P., Christou, A., Optimum Processing Prevents PQFP Popcoming, Surface Mount Technology, May 1995, pp. 39-42.	
		CHONG, D., Dunn, C., Lewis, T., Leblanc, J., Moisture Sensitivity of Surface Mount Plastic Packages, Proceedings of the Technical Program: Surface Mount International Conference and Exposition, 1992, pp. 421-426, Vol. 1, Edina, Minnesota.	
		SHOOK, R.L., Goodelle, J.P., Handling of Highly-Moisture Sensitive Components - An Analysis of Low-Humidity Containment and Baking Schedules.	
		INTEL Corp., Moisture Sensitivity/Desiccant Packaging/Handling of PSMCs, 2000 Packaging Databook, 1993, pp. 8-1 - 8-27.	
		IPC/JEDEC J-STD-020A, Moisture/Reflow Sensitivity Classification for Non-Hermetic Solid State Surface Mount Devices, IPC, April 1999.	
TL		IPC/JEDEC J-STD-033, Standard for Handling, Packing, Shipping and Use of Moisture/Reflow Sensitive Surface Mount Devices, IPC, April 1999.	

Examiner
Signature

T. J. M.

Date
Considered

6-26-03

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent & Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.